

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Attorney Docket No. 2005_2019A
Masao IENO et al. : **Confirmation No. 3272**
Serial No. 10/563,633 : Group Art Unit 1619
Filed January 6, 2006 : Examiner Garen Gotfredson
SUSTAINED-RELEASE POLYMER FOR : **Mail Stop: AF**
AMINO ACID DERIVATIVE, COSMETIC
AND FIBER STRUCTURE CONTAINING
THE SAME AND METHOD FOR
MANUFACTURING AND FOR
REGENERATING THE SAME

RESPONSE TO ADVISORY ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Responsive to the Advisory Action of June 13, 2011, Applicants submit the following remarks in support of the patentability of the presently claimed invention over the disclosures of the references relied upon by the Examiner in the Office Action of March 18, 2011. Further and favorable reconsideration is respectfully requested in view of these remarks.

Initially, in the Advisory Action, the Examiner has taken the position that the rejections of the Office Action of March 18, 2011 have not been overcome by the Response filed May 18, 2011. Applicants again respectfully traverse the rejection of claims 1, 2, 7 and 8 under 35 U.S.C. §103(a) as being unpatentable over Nakashima et al. (US 7,273,501, hereinafter “Nakashima”) in view of Nomura et al. (Japanese Patent Abstract of Publication No. 08-060547, hereinafter “Nomura”) and the rejection of claim 6 under 35 U.S.C. §103(a) as being unpatentable over Nakashima in view of Nomura, and further in view of Hirose et al. (Japanese Patent Abstract of Publication No. 2002-013071, hereinafter “Hirose”).

On the Continuation sheet attached to the Advisory Action, the Examiner argues that the combination of Nakashima and Nomura “results in the addition of the strong moisture

absorptive/desorptive properties of the sericin to the fiber”. However, Applicants respectfully assert that this position is incorrect. Nomura discloses that the fiber, to which sericin is added, provides sufficient moisture retaining effects to the horny layer of the skin, and also helps the skin retain moisture over a long period of time. See abstract of Nomura. Nomura never teaches or suggests that the fiber itself, to which sericin is added, has strong moisture absorptive/desorptive properties. See the English translation of Nomura, attached herewith.

Further, a fiber having moisture-retaining effects is not the same as a fiber having strong moisture absorptive/desorptive properties. Thus, although Nomura discloses that a fiber to which sericin is added, provides sufficient moisture retaining effects to the skin, Nomura neither discloses nor suggests that the fiber itself exhibits strong moisture absorptive/desorptive properties. Absent such suggestion, the combination of Nomura and Nakashima cannot provide motivation for “further enhancing the moisture absorptive/desorptive properties” of the fiber, as argued by the Examiner.

In an attempt to bolster the argument that sericin adds moisture absorptive/desorptive properties to a fiber, the Examiner has cited Zhang et al. (Biotechnology Advances, 2002, vol. 20, pp. 91-100, hereinafter “Zhang”) in the Office Action of March 18, 2011.

Zhang discloses that a water absorbing property or a moisture absorbing property (hygroscopicity) is provided by applying sericin to fibers. Initially, water absorbing property is a property of absorbing water in liquid form, which is completely different from moisture absorbing property, which is a property of absorbing water in gas form. Therefore, the disclosure in the first paragraph on page 97 of Zhang that “[t]he formed compound polymer can absorb more than 100 times its weight in water ... can absorb moisture up to 180 times its weight”, is merely a disclosure of the water absorbing property of the compound polymer and not the moisture absorbing property. Thus, one of ordinary skill in the art would not be able to guess the degree of moisture absorbance from the mere disclosure of a water absorbing property in the Zhang reference.

Further, regarding the property of moisture absorbance, Zhang discloses in the first paragraph on page 98, that the “sericin-modified polyester fiber can be more than five times as hygroscopic as untreated polyesters”. However, according to the Wakabayashi and Sugioka reference (Japan Patent 06-017372A), from which the above disclosure of Zhang is derived (see

last sentence on page 97 of Zhang), the degree of moisture absorbance of an untreated polyester fiber is 0.6% and the degree of moisture absorbance of a sericin-modified polyester fiber is only 3.2%. In contrast, the degree of moisture absorbance of the fiber of Nakashima is 10% or more (see claim 1 of Nakashima).

Further, as discussed heretofore, if sericin is added to the fiber of Nakashima, carboxyl groups of a salt type, which contribute to the moisture absorbing and desorbing property of the Nakashima fiber, will decrease due to ionic bonds formed between the carboxyl groups and sericin. Based on the teachings of Nakashima, a person having ordinary skill in the art would expect that the moisture absorptive and desorptive properties of a fiber are lowered by decreasing the amount of the carboxyl groups of a salt type.

In lines 6-8 on page 3 of the Office Action of March 18, 2011, the Examiner admits that the addition of sericin necessarily forms ionic bonds. Therefore, based on the disclosure of Nakashima and Zhang, a person having ordinary skill in the art would readily recognize that the addition of sericin would clearly not lead to an improvement of the moisture absorbing and desorbing property of the fiber of Nakashima, but would lead to a removal of the original moisture absorbing and desorbing property of the fiber (due to a decrease in carboxyl groups of a salt type), and the addition of the moisture absorbing and desorbing property of the sericin.

Thus, whereas the degree moisture absorbance of the fiber of Nakashima is 10% or more, the improvement in the moisture absorbing rate of a fiber, to which sericin is added, as disclosed in Zhang (which disclosure is derived from Wakabayashi and Sugioka (Japan Patent 06-017372A)), is merely 2.6% (3.2% - 0.6%). Therefore, the Examiner's argument in the second paragraph on page 5 of the Office Action of March 18, 2011 that "one of ordinary skill would not expect a fiber to exhibit reduced moisture absorptive properties if coated with a highly moisture absorptive substance" is incorrect.

Specifically, based on the disclosure of Zhang (derived from Wakabayashi and Sugioka), a person having ordinary skill in the art would expect that the addition of sericin to the fiber of Nakashima would lead to a substantial decrease in the moisture absorbing property, i.e., from 10% or more to 2.6%. Therefore, when read together with the disclosure of Nakashima, i.e., that a decrease in carboxyl groups of a salt type leads to a decrease in moisture absorbing and

desorbing properties, the disclosure of Zhang actually supports the assertion that Nakashima teaches away from a combination with Nomura.

Based on the above, it is clear that Nakashima teaches away from a combination with Nomura, which assertion is supported by the Zhang reference cited by the Examiner in the Office Action of March 18, 2011. Accordingly, withdrawal of the rejections is respectfully requested.

Conclusion

In view of the foregoing remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Masao IENO et al.

/Chao Gao/

By 2011.06.20 14:40:47 -04'00'

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June 20, 2011

Attachments:

English translation of Nomura et al. (JP 08-060547)